

WHAT IS CLAIMED IS:

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1. A method of monitoring a vascular access during a dialysis treatment using a dialyzer subdivided into a blood chamber by a semipermeable membrane into a blood chamber and a dialysis fluid chamber, the method comprising:

- passing blood through an arterial blood line of an extracorporeal blood circulation path into the blood chamber and returning the blood from the blood chamber through a venous blood line of the extracorporeal blood circulation path;
- providing fresh dialysis fluid via a dialysis fluid inlet line of a dialysis fluid path to the dialysis fluid chamber and removing spent dialysis fluid from the dialyzer via a dialysis fluid drain line of the dialysis fluid path;
- monitoring pressure in the extracorporeal blood circulation path through pressure pulses generated in the dialysis fluid path so that a faulty vascular access is deduced when a characteristic change in the pressure pulses is detected.

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2. The method as recited in claim 1 wherein the pressure pulses monitored in the extracorporeal blood circulation path are generated by a balancing device connected in the dialysis fluid inlet line and dialysis fluid drain line, the balancing device having at least one balancing chamber subdivided by a movable partition into two balancing chamber halves, one balancing chamber half being filled with fresh dialysis fluid and the other balancing chamber half having spent dialysis fluid discharged in a first balancing cycle, one half of the balancing chamber being filled with spent dialysis fluid and the other half of the balancing chamber having fresh dialysis fluid discharged and in a second balancing cycle.

3. The method as recited in claim 1 further comprising measuring a correct vascular access pressure in the extracorporeal blood circulation path and storing a corresponding periodic pressure characteristic signal at the start of a dialysis treatment, and wherein the monitoring step includes continuously measuring the pressure during the dialysis treatment and comparing a resulting signal with the stored periodic pressure characteristic signal, the faulty vascular access being deduced from the comparing.

4. The method as recited in claim 1 wherein the pressure in the extracorporeal blood circulation path is monitored in the venous blood line.
5. The method as recited in claim 1 wherein the pressure in the extracorporeal blood circulation path is monitored in the arterial blood line.
6. The method as recited claim 1 further comprising triggering an alarm when the faulty vascular access is deduced.
7. The method as recited in claim 1 further comprising interrupting blood flow in the extracorporeal blood circulation path when faulty vascular access is deduced.

8. An apparatus for dialysis treatment comprising:
- a dialyzer subdivided by a semipermeable membrane into a blood chamber and a dialysis fluid chamber;
 - an extracorporeal blood circulation path including an arterial blood line and a venous blood line, the arterial blood line being connected to an inlet of a blood chamber, the venous blood line being connected to an outlet of the blood chamber;
 - a dialysis fluid path having a dialysis fluid inlet line and a dialysis fluid outlet line, the dialysis fluid inlet line being connected to an inlet of the dialysis fluid chamber, the dialysis fluid outlet line being connected to an outlet of the dialysis fluid chamber;
 - a pressure pulse generator disposed in the dialysis fluid path for generating pressure pulses; and
 - a device for monitoring a vascular access during the dialysis treatment, the device including a pressure sensor and an analyzer unit, the pressure sensor for monitoring a pressure of the blood in the extracorporeal blood circulation path so as to be able to sense the pressure pulses and for producing a corresponding signal and the analyzer unit for monitoring the corresponding signal and for determining that the vascular access is faulty upon a characteristic change in the pressure pulses.

9. The apparatus as recited in claim 8 wherein the pressure pulse generator includes a balancing device connected in the dialysis fluid inlet line and the dialysis fluid drain line for balancing fresh and spent dialysis fluid, the balancing device having at least one balancing chamber subdivided by a movable partition into two balancing chamber halves having chamber inlet and drain lines and having cutoff elements disposed in the chamber inlet and drain lines.

10. The apparatus as recited in claim 8 wherein the analyzer unit includes a memory for storing a pressure pulse characteristic signal of a proper vascular access and a central processor for comparing a measured pressure pulse signal with the pressure pulse characteristic signal, and for detecting a faulty vascular access upon a certain signal deviation.

11. The apparatus as recited in claim 8 wherein the pressure sensor is disposed in the venous blood line.

12. The apparatus as recited in claim 8 wherein the pressure sensor is disposed in the arterial blood line.

13. The apparatus as recited in claim 8 further comprising an alarm generator for generating an alarm when the faulty vascular access is deduced.

14. The apparatus as recited in claim 8 further comprising an interruptor for interrupting blood flow in the extracorporeal circulation path when the analyzer unit detects the faulty vascular access.